Information and Its Philosophy

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Abstract

Three problems in relation to Luciano Floridi's work on the Philosophy of Information (PI) and the relationship of PI to Library and Information Science (LIS) are considered: the claim that LIS is a materials-based discipline, Floridi's claim about Information as a message transfer system, and his downgrading of Social Epistemology to be a subset of PI. The recent history of LIS and the practice of professional library work are examined for evidence of the basis for making claims about LIS. A view of information based on individual interpretations is preferred to Floridi's account, which is found to be too innocent of LIS practice to be accepted without revision, as is his view of LIS as an applied PI.

Luciano Floridi has provided us with a sweeping review of work on Information. He has, in particular, advanced claims for a Philosophy of Information (PI), and has identified Library and Information Science (LIS) as applied PI. He has labeled us thus *contra* the claims of Shera and others that LIS is based on a social epistemology. If we accept Floridi's claims, we will see ourselves as part of a larger PI movement whose problems and program have been identified by Floridi in his forthcoming *Open Problems in the Philosophy of Information* (*OPPI*) (Floridi, in press-b). Many of these problems and several parts of the program will be familiar to LIS readers, especially those concerned with work in information retrieval. Much of Floridi's work is commendable on several counts. In particular, he has proposed a philosophical grounding to support much of what we in the LIS community do. His work reveals a deep structure of support in straight philosophy and in logic for

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many of our research concerns. It would be convenient to be able to use his work as the philosophical foundation some have sought for so long.

However, there are three main concerns that make it more difficult to take Floridi's claims without some further work. First, is the kind of idea he has about information, as a root concept for his philosophy of information (which he labels PI). Second, is the view he takes, entirely consistent with his view about information, of LIS that allows him to call it an applied PI, which effectively settles LIS as a materials-based discipline. Third, there is room for debate about the way Floridi downgrades Social Epistemology to be a sibling of LIS rather than a grounding explanation for it. Floridi allows that:

> a good test for a "foundational" candidate is to check whether it is able to learn from its applied counterpart . . . LIS does not need to acquire some ready-made philosophical foundation, it can play a key role in shaping one. (Floridi, 2002, p. 38).

We shall see that Floridi's account of LIS needs some amendment, and perhaps if an enhanced view of LIS is accepted, then we can secure a more advanced PI as a more fruitful base for LIS. In this article I shall be taking up some of Floridi's claims about defining information and the scope of LIS. There is also an alternative view of how the politics of LIS operate to produce the kind of field and profession that it is. First, we must consider how LIS constructs itself.

LIS and Professionalism

I claim first that the broad field of LIS separated itself from philosophy in the mid-nineteenth century. By "broad field" I mean both the academic discipline of LIS and the practice of librarianship—the business of running libraries and providing information. Broad LIS has been a profession equipped with professional tools that quintessentially solve the practical task in hand rather than construct a philosophically acceptable arrangement of knowledge. Since Dewey, and some others, we have the tools to arrange books on shelves and describe what they are and where they originated, and we have concentrated on being good at that. A concern for the true relationship of any item to knowledge, or of the exact information content of any item, has remained the domain of specialists. The claims of LIS to be normative are muted and specific to the professional apparatus of LIS—the classification and description of materials, the identification of information-seeking behaviors, and the control (that is, universal awareness of the existence) of information materials. LIS is not normative about knowledge or its epistemology—we shall return to this later—but it operates within a cultural frame that gives purpose to its professional devices. LIS, I maintain, has a dual focus: first toward the rest of the academy, producing the work on information retrieval and information-seeking behav-

ior, the history of books, and the dissemination of ideas; and second toward the practice of running libraries and other information agencies, where LIS works to produce the working tools and devices of the practice. The practice of librarianship is closely related to but not co-extensive with LIS.

Second, in the twentieth century, LIS has reconstructed itself away from an overwhelming concern with information materials (documents) and their organizational systems to an equal concern with the behavior of individual people who use libraries, and documents. This concern with individual information use reflects an ambiguity about library service, which is a public community facility provided for individual use. Everyone entering a library has his or her own program in mind: there is no common social goal, but the cumulative practice of these individuals is a social act. Librarianship is a social practice, and any social epistemology must account for this individual behavior within the social practice, and any philosophy of LIS must account for it too. The close relationship between the way people construct their own individual identity and individual information seeking must be reflected in the concept of information that LIS embraces.

The practical orientation of LIS leads to a third claim. No common or shared view exists in the LIS community about the philosophical or theoretical underpinnings of LIS. Indeed, many practitioners work in the belief that theories can tell them little in the performance of their daily tasks. Theoretical and philosophical explanations of what LIS might be are competing for attention and primacy in rendering an account to the members of the LIS community of what it is that we do. Within the professional social struggle for definition of the subject, those researchers, theorists, and practitioners who want to find and assert the intellectual underpinnings for LIS, and who want to seek, promote, and work within an understanding of our relation to other parts of the academy, work at times as a minority within the field. This is not necessarily bad and is certainly not unique. Within the field of law, for example, there is a similar imbalanced (in terms of numbers) relationship between the relatively small coterie of legal theorists and philosophers, including U.S. Supreme Court justices and their like, and the vast body of practicing attorneys. These latter work in a daily environment where clients come to them seeking not learned disquisitions on whether this or that law is good or bad, or what the intentions of a system of justice might be, but seeking to get the law to work on their side in some dispute. These practitioners know which forms to complete, which is the best judge to come before, how to turn a piece of evidence to an advantage; the niceties of jurisprudence they leave to others.

When I go into the library and seek the help of a librarian, I do so because I just want that person to fix the system for me by getting the book I want, finding the references I need, fixing an extension of my loans, and getting some more copies on the shelves for my students. Many librarians not only seem happy to work that way but are content without knowledge

of the imperfections in our understanding of the nature of information. When they make a point about what librarianship is, they point to customer satisfaction, management of resources, and personal fulfillment. If they are to give credence to a view of LIS as a social epistemology or an applied PI, they want to be given good reasons. The tension in the LIS workforce is not just between this theory and that philosophy, but between all the sets of competing claims, theoretical and nontheoretical. The appeal of something like Floridi's PI must be not just that it is right, or at least gives a more complete explanation of our situation in the firmament of academic disciplines in a way that all fair-minded people must assent to, but that it is a useful weapon in the social and political struggles within LIS for one particular set of interests. Practitioners within LIS learn about the practice through experience of it and build their understanding by reflection that leads them to adjust their practice and understanding. This subjectivity extends beyond performance in the workplace to include reflection on both personal identity and the appeal to the host-funding community of the conception of LIS that practitioners present (Cornelius, 1996a). Any PI must: (1) offer an explanation for a very wide range of phenomena and practices, from book history and curatorship, reading stories to children, and model-building in information retrieval (IR) and information seeking and (2)take account of how we remodel ourselves (say, from being librarians to being information scientists and then to being information managers) from time to time, according to the presentation of ourselves and of our practice that we wish to make to the world.

Accounting for LIS

Floridi's account of LIS needs to recognize the plurality of LIS, and also the changes in the things we do and the changing status, through time, of different parts of the LIS universe. Floridi makes LIS a normative study, but I think this is too sweeping. Although LIS is normative in respect to its sense of purpose, much of LIS and library practice is based on observation of use. Within strictly professional concerns, the only area where normative stances in relation to knowledge are obvious is in collection-building, and normative practices even here are largely limited to the public library: in academic and special libraries, collection-building follows use and clients' demands. I think Floridi's account is confused by the ambiguity that he explicitly identifies in Shera's approach to social epistemology (Floridi, 2002, p. 40). This leads Floridi, in my view, to conflate two things: the practical work of managing the work of the library by the librarian and the construction of LIS. The first, the daily focus of the librarian, will at its best be informed but not totally prescribed by, on the one hand, professional education, and, on the other hand, by some overall sense of involvement in a world of liberal learning—the sense of purpose that comes with acceptance of the benign role of knowledge in the world. The

second, the construction of LIS, will have as one of its objectives the construction of a realistic representation or schema of knowledge. In part, this will be informed by a sense of what the organization of classes of knowledge should be, but to be successful any such organization of knowledge by LIS must mirror what the customers accept.

Consider, for example, the construction of a subject bibliography, which could well serve as an introduction for some readers to a subject new to them. Let us say that a subject bibliography of sociology is being compiled. Whatever subject organization is adopted is effectively a claim by the author and compiler to assert the character, scope, subdivisions, significance, and sequence of sociology and of topics within it. Several introductory textbooks adopt their own organization of topics and so mirror the organizational assertions of the bibliographer about sociology. But, if the readers fail to accept the compiler's version of the subject's organization, then the bibliography will fail. LIS cannot be normative except by accepting and adopting the normative frame of the people using the subject. The practicing librarian has but two degrees of freedom over classification of subjects: first, in the decision as to which classification scheme to use and second, a purely local option, either to accept, because it privileges what is local and thus of most interest and significance, or to deny, because international consistency should be maintained, some local warrant about the sequence of subdivisions of a subject—and then only if the classification scheme allows it.

The practicing librarian may be influenced by the sense of liberal learning, keeping the light of knowledge burning like a beacon for all to see more clearly, and may be influenced by the rubrics of a professional education, but in the sense of discovering by a cycle of reflection, clearer understanding, and improved practice what it is that LIS might be, any librarian will find that their own sense of identity and their sense of the practice they are engaged in determine what LIS is for them more so than any sense of a social epistemology.

No practice is merely the sum of its activities. Cooking is not just the organization of what is in the kitchen; law is not just the organization or even the intellectual antecedents of laws; medicine is more than what is in the textbooks. No librarian will presume to give legal or medical advice on the basis of knowing what the books say. Although the daily practice and focus of the librarian may be heavily centered around housekeeping tasks, the sense of what they make available to readers is not limited to managing access to the books. For this reason, the view of LIS as either the body of knowledge that allows the librarian to do her job or the view of LIS as a science of information is critically short of content, particularly in Floridi's formation of LIS and librarianship. Floridi wants to cement LIS onto a basis of dealing with physical materials—"its object is not knowledge itself but the information sources that make it possible" (2002, p. 41). Because anything can be a source of knowledge, and therefore of interest to LIS, he

claims that LIS extends beyond the domain of organized knowledge, suggesting that the organization of knowledge is partly outside the scope of the librarian and that the librarian's interest in knowledge is limited to sources. Floridi wants this to mean that LIS needs something more basic than a social epistemology, something that can deal with the question of information.

It is true that LIS could make use of a PI, but for such a philosophy to be in some kind of hierarchical relation to LIS requires more than Floridi has so far offered us. Floridi actually has different ambitions for his PI than merely accounting for LIS. It would be possible to argue, though, that he needs his PI to be able to explain LIS, for otherwise a science that claims to deal with information is being left outside and unaccounted for by PI. Floridi summarizes the objectives of PI as follows:

> PI is the philosophical field concerned with (a) the critical investigation of the conceptual nature and basic principles of information, including its dynamics, utilization, and sciences and (b) the elaboration and application of information-theoretic and computational methodologies to philosophical problems. (Floridi, 2002, p. 43)

Part (b) of this definition states clearly Floridi's ambition for a philosophy based on information: our concern is with part (a), but in passing we should note that in claiming for PI a methodology for all philosophy he is also implicitly stating a preference for PI as something that explains philosophical issues, rather than a means of explaining an information profession or discipline.

With respect to PI (a) we have to confront some variation in Floridi's prescription. In several places he emphasizes the possibility of multiple theories or concepts of information, setting for PI only the task of investigating the question "What is x?" (i.e., information). He quotes Shannon approvingly (p. 43), "It is hardly to be expected that a single concept of information would satisfactorily account for the numerous possible applications of this general field" (1993, p. 180). Earlier Floridi states of PI that "On the whole, its task is not to develop a unified theory of information, but rather an integrated family of theories that analyze, evaluate, and explain the various principles and concepts of information . . ." and "recent surveys have shown no consensus on a single unified definition of information" (2002, p. 43). Contrary to this, we have substantial work by Floridi (Floridi, in press-a) that concentrates strongly on information as well-formulated, meaningful data in a data set, which seems to limit the range of possible concepts of information to one or more of those concerned with information as a transferred message. Furthermore, he explicitly confines the form of information that concerns LIS to information in documents.

> (LIS) Library and Information Science as Applied Philosophy of Information is the discipline concerned with documents, their life cycles and

> the procedures, techniques, and devices by which these are implemented, managed, and regulated. LIS applies the fundamental principles and general techniques of PI to solve definite, practical problems and deal with specific, concrete phenomena. In turn, it conducts empirical research for practical service-oriented purposes (e.g., conservation, valorization, education, research, communication, and cooperation), thus contributing to the development of basic research in PI. (Floridi, 2002, p. 46)

Let us pass over the evasion and unexplained entailment of "thus" in the last line above. A science that concerned itself only with documents could not, for example, attempt a classification of knowledge, or even an understanding of how the documents are used. While the practical daily work of many librarians is concerned with the management of documents, the reason for the documents being there in the library is the expressed need of the clientele. This expressed need, or even a need anticipated by the library staff, is not information, it may not even translate directly into knowledge, and it is not just documents. In our descriptive and classificatory exercises, we deal with the concept of an idealized document of which the example we have is but one, possibly imperfect, copy. The idea we have of a document is not just a book in the hand, it is a concept of a complete work. That work may be an online bus timetable, but it also may be a multivolume edition of Gibbon's *Decline and Fall of the Roman Empire* (1776–1778). We may have a one-volume abridged edition or a four-volume or an eight-volume edition of Gibbon, but they are all linked to an abstract idea of the original work. Gibbon's work is a good read, but its truth-value may be disputed. It certainly could not be represented as a sacred text or as a statement of current historical scholarship. Many students would even doubt that it is a good read. Why then can it have space, or the possibility of space, in a modern public or academic library? It is a "Desert Island" book, along with Shakespeare, the Bible, and *Wisden* ("the cricketers' Bible")—it is a part of our cultural heritage. As our cultural horizons expand, we legitimize more and more within the library—so *War and Peace*, the poems of Wang Wei, Buddhist philosophy, the Gettysburg address, and others are appropriated by us, and we in turn are expanded by contact with them. The link between information, documents, and knowledge is the concept of learning, and it is in a commitment to the processes of learning that LIS builds its sense of a discipline. We can build a science of document management, what Floridi wants in LIS, if we have only a sense of the value of documents. To build a knowledge and understanding of, and a philosophy for, the modern library, we need a more sophisticated sense of involvement in our culture and the driving forces behind it. Floridi, in part, accepts this when he writes of educational needs and values being implemented in the library (2002, p. 39). The understanding behind the library, shared by clients and librarians, is that the library can meet a purpose such as education, information,

or entertainment. Libraries, or information generally, can help attain these ends because we all believe, usually implicitly, in some version of the Enlightenment Project. Libraries, of course, predate the Enlightenment, but modern librarianship, making information available to all, is a child of the Enlightenment. We connect to our past (and thus Gibbon) both because they enrich our sense of ourselves and because they help explain our world to us. The belief in progress and individual betterment or empowerment through the application of reason and the use of knowledge is the engine of the library world, and documents are just its fuel. The conceptions we build from time to time of what LIS is and what librarians do reflect our changed understanding of the field. (Cornelius, 1996a). The techniques we have to manage documents are directionless without the sense of purpose, cultural context, and possibilities allowed by the epistemology of the Enlightenment. LIS cannot be reduced to the techniques of document management and should not be confused with the job of running a library. The library job, in fact, relates closely to the sociology of social knowledge that Floridi rejects as a foundation for LIS. It is the social nature of library practice that makes poignant the confusion about the definition of information in LIS. Those seeking to build LIS based on documents would be well-served by a concept of objective information with stable meaning; those who look first at the character of human information seeking are more likely to find information a far more complex phenomenon, with no stable meaning and a base in the cultural and social contexts in which the information is sought and used.

Floridi's account of Information

The second problem with Floridi's PI is its concentration, mentioned above, on a message transfer concept of information. The possibility of many concepts of information, seemingly allowed for by Floridi but never openly discussed, let alone worked through, is given some attention in *OPPI* (in press-b). In discussing these open problems, Floridi allows, in passing, that it may be the case that information exists only in the mind of the informee (see *OPPI*, Proposition 16). We can discuss this point in several ways. It might be that we just employ the word "information" as a technical term and limit its use to the sense in which Floridi and others commonly refer to it, as some sense of the content of a document or proposition. To do so would remove the possibility of discussing information as a phenomenon, or of building a philosophy around it.

If we accept that there is a move from data to information to knowledge, and that the latter is only in the mind of one or more receiving agents, then we must also discuss the point at which data becomes information. Clearly one possible explanation is that the change occurs as the information is received by the informee. Clearly, too, the word "information" must be related in some way to the idea of meaning, a point Floridi also raises in *OPPI*.

The relationship between meaning and information is much discussed: all that needs to be said here is that a concept of information limited to the semantic content of a message cannot be limited to the message itself. If the message is semantic, it must in most cases be semantic for someone. Language is a social construction, and the meanings of messages are effectively socially constructed too. The only exception is where information is somehow immanent in a message and will always be there whether or not there is an informee. The example given by Floridi is the case of tree rings. The tree stump displays its message of how old it is by the incidence of countable rings in the stump, regardless of the presence or absence of a recipient. Dinosaur footprints in solidified mud also convey information despite the dinosaur having no known intention of doing so. There is also information of which I am unaware. As I sit in the garden with my radio turned on, I can comprehend the information it imparts to me; when I turn the radio off, the radio signals carrying the information are still being beamed at me and my radio but I am unaware of them or their content. It would seem that with the tree rings or the footprints I have the means to comprehend and interpret the message, but with the radio waves I do not without the radio. Thus, for an information connection to be made, it must be that I am in an information system, which means I am dependent on technology and on a level of education in a particular culture. To accept information, we also must be willing to accept the authority of it. It may be that the cobblestones in the street outside my window are varied in color and a pattern can be distinguished in them. The pattern could appear to me to be random, but in fact it traces the face of my neighbor's uncle, or it could trace a date that by coincidence is my birthday, or it could trace the words "No Parking." It could be that a clairvoyant revealed to me the circumstances of September 11, 2001, in New York well in advance, but that I discredited the idea as too far-fetched. In all these cases the decision about meaning and information is made at the point of receipt by the potential informee.

Information is what we recognize as information, but our capacity to recognize it as such depends on several factors. Notoriously, information received by different people is interpreted in different ways (Cornelius, 1996b). Supreme Court justices, using the same information and the same laws, can arrive at different decisions, as the U.S. Supreme Court Justices have done in split decisions on many occasions. Business people in similar circumstances make different decisions—look at how airlines worldwide responded to the problems of late 2001 onward. People in fractured communities react to the same information in different ways, according to cultural preferences. Furthermore, it cannot be, as Fox (1983) claimed, that information can only be conveyed if, and only if, the informee has the capacity to know that the information is right. In the case of schoolchildren, they cannot know whether what they learn from the teacher is right: they must take it on trust, but they do have the capability to know because they

function within a language game or form of life. It is the capacity to work successfully within such a form of life that allows us to recognize libraries and their purpose and to recognize what can count as information. These capabilities are all learned and are dependent on memory, a sense of purpose, and the ability to operate within a communication system. This is consistent with what Evans (1982, p. 23) calls "being in an informational state" where an information system works as a substratum of our cognitive lives. Information becomes the function of an individual's cognitive apparatus, but it also is given effect only within a social context. Information is a social product.

Conclusion

In summary I want to say that Floridi's PI, as it stands, is innocent of the social character of a field like LIS and the way it constructs itself. His view of information needs some easing away from a simple message transfer system, and the unexamined concerns expressed about the position of the informee in *OPPI* (Proposition 16) need to be accommodated within the understanding of information. Finally, his PI would be more widely applicable in LIS if it could take into account individual information behavior.

These remarks do not dent Floridi's PI severely, but it is legitimate to ask that the representation of LIS as an applied PI be reworked. We need a more empirically sensitive understanding of what LIS is and how it varies from the practice of managing libraries. We also need an account of information that takes into consideration the relationship between our purpose, our practices, and the social context of information, which cannot have an objective meaningful existence independent of a recipient. What we need, to account for LIS practice, is "PI-2."

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